Vartan Kurtcuoglu

List of Publications by Year in descending order

101 papers	3,494 citations	159585 30 h-index	161849 54 g-index
110 all docs	110 docs citations	110 times ranked	4557 citing authors

#	Article	IF	Citations
1	Phosphorylation of VE-cadherin is modulated by haemodynamic forces and contributes to the regulation of vascular permeability in vivo. Nature Communications, 2012, 3, 1208.	12.8	387
2	Glymphatic solute transport does not require bulk flow. Scientific Reports, 2016, 6, 38635.	3.3	231
3	Frequently asked questions in hypoxia research. Hypoxia (Auckland, N Z), 2015, 3, 35.	1.9	167
4	Computational modeling of coupled blood-wall mass transport of LDL: effects of local wall shear stress. American Journal of Physiology - Heart and Circulatory Physiology, 2008, 294, H909-H919.	3.2	107
5	Three-Dimensional Computational Modeling of Subject-Specific Cerebrospinal Fluid Flow in the Subarachnoid Space. Journal of Biomechanical Engineering, 2009, 131, 021010.	1.3	101
6	Flow induced by ependymal cilia dominates near-wall cerebrospinal fluid dynamics in the lateral ventricles. Journal of the Royal Society Interface, 2014, 11, 20131189.	3.4	93
7	Computational investigation of subject-specific cerebrospinal fluid flow in the third ventricle and aqueduct of Sylvius. Journal of Biomechanics, 2007, 40, 1235-1245.	2.1	92
8	Choosing the optimal wall shear parameter for the prediction of plaque locationâ€"A patient-specific computational study in human left coronary arteries. Atherosclerosis, 2012, 221, 432-437.	0.8	92
9	Patient-specific three-dimensional simulation of LDL accumulation in a human left coronary artery in its healthy and atherosclerotic states. American Journal of Physiology - Heart and Circulatory Physiology, 2009, 296, H1969-H1982.	3.2	90
10	Choosing the optimal wall shear parameter for the prediction of plaque locationâ€"A patient-specific computational study in human right coronary arteries. Atherosclerosis, 2010, 211, 445-450.	0.8	89
11	Control of initial endothelial spreading by topographic activation of focal adhesion kinase. Soft Matter, 2011, 7, 7313.	2.7	85
12	Cerebrospinal fluid dynamics in the human cranial subarachnoid space: an overlooked mediator of cerebral disease. I. Computational model. Journal of the Royal Society Interface, 2010, 7, 1195-1204.	3.4	83
13	Purification of metallurgical grade silicon by a solar process. Solar Energy Materials and Solar Cells, 2006, 90, 2099-2106.	6.2	76
14	How astrocyte networks may contribute to cerebral metabolite clearance. Scientific Reports, 2015, 5, 15024.	3.3	74
15	Fluid Dynamics in the HeartMate 3: Influence of the Artificial Pulse Feature and Residual Cardiac Pulsation. Artificial Organs, 2019, 43, 363-376.	1.9	72
16	Accelerated endothelial wound healing on microstructured substrates under flow. Biomaterials, 2013, 34, 1488-1497.	11.4	71
17	Blood Pump Design Variations and Their Influence on Hydraulic Performance and Indicators of Hemocompatibility. Annals of Biomedical Engineering, 2018, 46, 417-428.	2.5	64
18	Computational Modeling of the Mechanical Behavior of the Cerebrospinal Fluid System. Journal of Biomechanical Engineering, 2005, 127, 264-269.	1.3	55

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19	Complementary X-ray tomography techniques for histology-validated 3D imaging of soft and hard tissues using plaque-containing blood vessels as examples. Nature Protocols, 2014, 9, 1401-1415.	12.0	55
20	Remodelling of the aortic root in severe tricuspid aortic stenosis: implications for transcatheter aortic valve implantation. European Radiology, 2009, 19, 1316-1323.	4.5	53
21	Rapid adaptation to microgravity in mammalian macrophage cells. Scientific Reports, 2017, 7, 43.	3.3	50
22	Hemodynamics in coronary arteries with overlapping stents. Journal of Biomechanics, 2014, 47, 505-511.	2.1	48
23	B-waves revisited. Interdisciplinary Neurosurgery: Advanced Techniques and Case Management, 2016, 6, 13-17.	0.3	48
24	Virtual surgical planning, flow simulation, and 3-dimensional electrospinning of patient-specific grafts to optimize Fontan hemodynamics. Journal of Thoracic and Cardiovascular Surgery, 2018, 155, 1734-1742.	0.8	41
25	Age-Specific Characteristics and Coupling of Cerebral Arterial Inflow and Cerebrospinal Fluid Dynamics. PLoS ONE, 2012, 7, e37502.	2.5	41
26	Generation of renal Epo-producing cell lines by conditional gene tagging reveals rapid HIF-2 driven Epo kinetics, cell autonomous feedback regulation, and a telocyte phenotype. Kidney International, 2019, 95, 375-387.	5.2	40
27	Cell Image Velocimetry (CIV): boosting the automated quantification of cell migration in wound healing assays. Integrative Biology (United Kingdom), 2012, 4, 1437-1447.	1.3	38
28	X-ray phase tomography with near-field speckles for three-dimensional virtual histology. Optica, 2020, 7, 1221.	9.3	37
29	Is posture-related craniospinal compliance shift caused by jugular vein collapse? A theoretical analysis. Fluids and Barriers of the CNS, 2017, 14, 5.	5.0	33
30	Long-term follow-up, computed tomography, and computational fluid dynamics of the Cabrol procedure. Journal of Thoracic and Cardiovascular Surgery, 2010, 139, 1602-1608.	0.8	32
31	On ultrasound-induced microbubble oscillation in a capillary blood vessel and its implications for the bloodâ€“brain barrier. Physics in Medicine and Biology, 2012, 57, 1019-1045.	3.0	32
32	Computed high concentrations of low-density lipoprotein correlate with plaque locations in human coronary arteries. Journal of Biomechanics, 2011, 44, 2466-2471.	2.1	31
33	Topography-mediated apical guidance in epidermal wound healing. Soft Matter, 2012, 8, 6922.	2.7	30
34	Thrombotic Risk of Rotor Speed Modulation Regimes of Contemporary Centrifugal Continuous-flow Left Ventricular Assist Devices. ASAIO Journal, 2021, 67, 737-745.	1.6	30
35	Ex vivo and in vivo coronary ostial locations in humans. Surgical and Radiologic Anatomy, 2009, 31, 597-604.	1.2	29
36	Phantom Model of Physiologic Intracranial Pressure and Cerebrospinal Fluid Dynamics. IEEE Transactions on Biomedical Engineering, 2012, 59, 1532-1538.	4.2	29

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37	Mixing and Modes of Mass Transfer in the Third Cerebral Ventricle: A Computational Analysis. Journal of Biomechanical Engineering, 2007, 129, 695-702.	1.3	27
38	Compound Ex Vivo and In Silico Method for Hemodynamic Analysis of Stented Arteries. PLoS ONE, 2013, 8, e58147.	2.5	27
39	Drug deposition in coronary arteries with overlapping drug-eluting stents. Journal of Controlled Release, 2016, 238, 1-9.	9.9	27
40	Patient-Specific Surgical Planning, Where Do We Stand? The Example of the Fontan Procedure. Annals of Biomedical Engineering, 2016, 44, 174-186.	2.5	26
41	Hypoxia sensing by hepatic stellate cells leads to VEGF-dependent angiogenesis and may contribute to accelerated liver regeneration. Scientific Reports, 2020, 10, 4392.	3.3	26
42	Analytical solution for pulsatile viscous flow in a straight elliptic annulus and application to the motion of the cerebrospinal fluid. Physics of Fluids, 2008, 20, .	4.0	25
43	Cerebrospinal fluid dynamics in the human cranial subarachnoid space: an overlooked mediator of cerebral disease. II. In vitro arachnoid outflow model. Journal of the Royal Society Interface, 2010, 7, 1205-1218.	3.4	24
44	Comparison of anti-siphon devicesâ€"how do they affect CSF dynamics in supine and upright posture?. Acta Neurochirurgica, 2017, 159, 1389-1397.	1.7	24
45	Wall stress of the cervical carotid artery in patients with carotid dissection: a case-control study. American Journal of Physiology - Heart and Circulatory Physiology, 2011, 300, H1451-H1458.	3.2	23
46	Renal oxygenation: preglomerular vasculature is an unlikely contributor to renal oxygen shunting. American Journal of Physiology - Renal Physiology, 2015, 308, F671-F688.	2.7	23
47	Renal blood flow and oxygenation. Pflugers Archiv European Journal of Physiology, 2022, 474, 759-770.	2.8	22
48	Reduced-order modeling of blood flow for noninvasive functional evaluation of coronary artery disease. Biomechanics and Modeling in Mechanobiology, 2019, 18, 1867-1881.	2.8	21
49	Virtual histology of an entire mouse brain from formalin fixation to paraffin embedding. Part 1: Data acquisition, anatomical feature segmentation, tracking global volume and density changes. Journal of Neuroscience Methods, 2021, 364, 109354.	2.5	20
50	A mathematical method for the 3D analysis of rotating deformable systems applied on lumenâ€forming MDCK cell aggregates. Cytoskeleton, 2010, 67, 224-240.	2.0	18
51	A Robust Algorithm for Segmenting and Tracking Clustered Cells in Time-Lapse Fluorescent Microscopy. IEEE Journal of Biomedical and Health Informatics, 2013, 17, 862-869.	6.3	18
52	Influence of Standard Laboratory Procedures on Measures of Erythrocyte Damage. Frontiers in Physiology, 2017, 8, 731.	2.8	18
53	Assessment of intracranial dynamics in hydrocephalus: effects of viscoelasticity on the outcome of infusion tests. Journal of Neurosurgery, 2013, 119, 1511-1519.	1.6	15
54	Barrier dysfunction or drainage reduction: differentiating causes of CSF protein increase. Fluids and Barriers of the CNS, 2017, 14, 14.	5.0	15

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55	Assessment of the Flow Field in the HeartMate 3 Using Three-Dimensional Particle Tracking Velocimetry and Comparison to Computational Fluid Dynamics. ASAIO Journal, 2020, 66, 173-182.	1.6	15
56	InÂvivo characterization of the integration and vascularization of a silk-derived surgical scaffold. Journal of Plastic, Reconstructive and Aesthetic Surgery, 2016, 69, 1141-1150.	1.0	14
57	High-Throughput Lossy-to-Lossless 3D Image Compression. IEEE Transactions on Medical Imaging, 2021, 40, 607-620.	8.9	14
58	Extending statistical learning for aneurysm rupture assessment to Finnish and Japanese populations using morphology, hemodynamics, and patient characteristics. Neurosurgical Focus, 2019, 47, E16.	2.3	14
59	Reconstruction of Cerebrospinal Fluid Flow in the Third Ventricle Based on MRI Data. Lecture Notes in Computer Science, 2005, 8, 786-793.	1.3	13
60	Computational Fluid Dynamics for the Assessment of Cerebrospinal Fluid Flow and Its Coupling with Cerebral Blood Flow. Biological and Medical Physics Series, 2011, , 169-188.	0.4	12
61	Continuous positive airway pressure alters cranial blood flow and cerebrospinal fluid dynamics at the craniovertebral junction. Interdisciplinary Neurosurgery: Advanced Techniques and Case Management, 2015, 2, 152-159.	0.3	12
62	Quantifying the relative contributions of different solute carriers to aggregate substrate transport. Scientific Reports, 2017, 7, 40628.	3.3	12
63	Functional Polarity of Microvascular Brain Endothelial Cells Supported by Neurovascular Unit Computational Model of Large Neutral Amino Acid Homeostasis. Frontiers in Physiology, 2018, 9, 171.	2.8	12
64	In Vitro Testing and Comparison of Additively Manufactured Polymer Impellers for the CentriMag Blood Pump. ASAIO Journal, 2021, 67, 306-313.	1.6	12
65	Insights Into the Low Rate of In-Pump Thrombosis With the HeartMate 3: Does the Artificial Pulse Improve Washout?. Frontiers in Cardiovascular Medicine, 2022, 9, 775780.	2.4	12
66	Patient Specific Hardware-in-the-Loop Testing of Cerebrospinal Fluid Shunt Systems. IEEE Transactions on Biomedical Engineering, 2016, 63, 348-358.	4.2	11
67	Integrated Flow Chamber System for Live Cell Microscopy. Frontiers in Bioengineering and Biotechnology, 2019, 7, 91.	4.1	11
68	Identification of Atherosclerotic Lesion-Prone Sites through Patient-Specific Simulation of Low-Density Lipoprotein Accumulation. Lecture Notes in Computer Science, 2008, 11, 774-781.	1.3	11
69	Virtual histology of an entire mouse brain from formalin fixation to paraffin embedding. Part 2: Volumetric strain fields and local contrast changes. Journal of Neuroscience Methods, 2022, 365, 109385.	2.5	11
70	Arterial, Venous, and Cerebrospinal Fluid Flow: Simultaneous Assessment with Bayesian Multipoint Velocity-encoded MR Imaging. Radiology, 2014, 270, 566-573.	7.3	10
71	Shape irregularity of the intracranial aneurysm lumen exhibits diagnostic value. Acta Neurochirurgica, 2020, 162, 2261-2270.	1.7	10
72	Modeling the interaction of microbubbles: Effects of proximity, confinement, and excitation amplitude. Physics of Fluids, 2014, 26, .	4.0	9

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73	The Bohr Effect Is Not a Likely Promoter of Renal Preglomerular Oxygen Shunting. Frontiers in Physiology, 2016, 7, 482.	2.8	9
74	The breakup of intravascular microbubbles and its impact on the endothelium. Biomechanics and Modeling in Mechanobiology, 2017, 16, 611-624.	2.8	9
75	Crosslinkable polymeric contrast agent for high-resolution X-ray imaging of the vascular system. Chemical Communications, 2020, 56, 5885-5888.	4.1	9
76	The role of the carotid sinus in the reduction of arterial wall stresses due to head movementsâ€"potential implications for cervical artery dissection. Journal of Biomechanics, 2009, 42, 755-761.	2.1	8
77	Craniospinal Pressureâ€"Volume Dynamics in Phantom Models. IEEE Transactions on Biomedical Engineering, 2012, 59, 3482-3490.	4.2	8
78	Modelling of Cerebrospinal Fluid Flow by Computational Fluid Dynamics. Biological and Medical Physics Series, 2019, , 215-241.	0.4	8
79	Reply to â€œLetter to the editor: â€˜The plausibility of arterial-to-venous oxygen shunting in the kidney: it all depends on radial geometry'â€• American Journal of Physiology - Renal Physiology, 2015, 309, F181-F182.	2.7	7
80	Renal arteriovenous oxygen shunting. Current Opinion in Nephrology and Hypertension, 2017, 26, 290-295.	2.0	7
81	Significant Association of Slow Vasogenic ICP Waves with Normal Pressure Hydrocephalus Diagnosis. Acta Neurochirurgica Supplementum, 2018, 126, 243-246.	1.0	7
82	Propagation of Plasma L-Phenylalanine Concentration Fluctuations to the Neurovascular Unit in Phenylketonuria: An in silico Study. Frontiers in Physiology, 2019, 10, 360.	2.8	7
83	Radiomics approach to quantify shape irregularity from crowd-based qualitative assessment of intracranial aneurysms. Computer Methods in Biomechanics and Biomedical Engineering: Imaging and Visualization, 2020, 8, 538-546.	1.9	7
84	Simultaneous Three-Dimensional Vascular and Tubular Imaging of Whole Mouse Kidneys With X-ray Î¼CT. Microscopy and Microanalysis, 2020, 26, 731-740.	0.4	7
85	Newborn Incubators Do Not Protect from High Noise Levels in the Neonatal Intensive Care Unit and Are Relevant Noise Sources by Themselves. Children, 2021, 8, 704.	1.5	6
86	Noninvasive Monitoring of Intracranial Pulse Waves. IEEE Transactions on Biomedical Engineering, 2023, 70, 144-153.	4.2	6
87	Shape Trumps Size: Image-Based Morphological Analysis Reveals That the 3D Shape Discriminates Intracranial Aneurysm Disease Status Better Than Aneurysm Size. Frontiers in Neurology, 2022, 13, 809391.	2.4	5
88	RAQ: a novel surrogate for the craniospinal pressureâ€"volume relationship. Physiological Measurement, 2020, 41, 094002.	2.1	4
89	Intraoperative Monitoring of CSF Pressure in Patients with Degenerative Cervical Myelopathy (COMP-CORD Study): A Prospective Cohort Study. Journal of Neurotrauma, 2022, 39, 300-310.	3.4	4
90	Letter to the Editor: Assessment of intracranial dynamics in hydrocephalus. Journal of Neurosurgery, 2014, 120, 1246.	1.6	3

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91	Non-rigid registration to determine strain fields during mouse brain fixation and embedding. , 2021, , .		3
92	Impact of fixation and paraffin embedding on mouse brain morphology: a synchrotron radiation-based tomography study. , 2021, , .		3
93	MODELING OF BLOOD-WALL LOW-DENSITY LIPOPROTEIN MASS TRANSPORT IN DEPENDENCE OF SHEAR STRESS. Journal of Biomechanics, 2008, 41, S277.	2.1	2
94	In-vitro measurement of ventricular cerebrospinal fluid flow using particle tracking velocimetry and magnetic resonance imaging. , 2008, , .		2
95	Cutaneous Heat Transfer and Its Effect on Contact Heat Evoked Brain Potentials. Experimental Heat Transfer, 2012, 25, 341-362.	3.2	2
96	Evaluation of metal nanoparticle- and plastic resin-based x-ray contrast agents for kidney capillary imaging. , 2019, , .		2
97	Pulsatile cerebrospinal fluid flow in the cranial subarachnoid space. Neurology Psychiatry and Brain Research, 2012, 18, 66-67.	2.0	1
98	Three-dimensional registration of synchrotron radiation-based micro-computed tomography images with advanced laboratory micro-computed tomography data from murine kidney casts. , 2014, , .		1
99	Analysis of L-leucine amino acid transporter species activity and gene expression by human blood brain barrier hCMEC/D3 model reveal potential LAT1, LAT4, B0AT2 and y+LAT1 functional cooperation. Journal of Cerebral Blood Flow and Metabolism, 2021, , 0271678X2110395.	4.3	1
100	Why Hydrocephalus Patients Suffer When the Weather Changes: A New Hypothesis. Acta Neurochirurgica Supplementum, 2021, 131, 315-317.	1.0	0
101	RAQ: A Noise-Resistant Calibration-Independent Compliance Surrogate. Acta Neurochirurgica Supplementum, 2021, 131, 207-210.	1.0	0